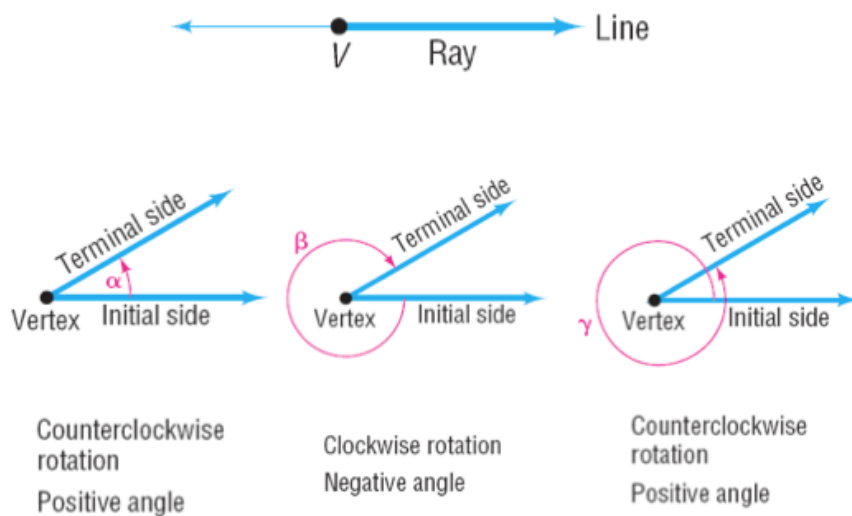
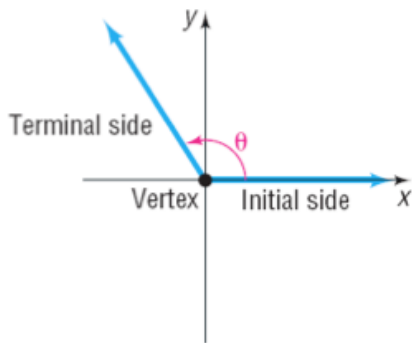


Chapter 6 Trigonometric Functions

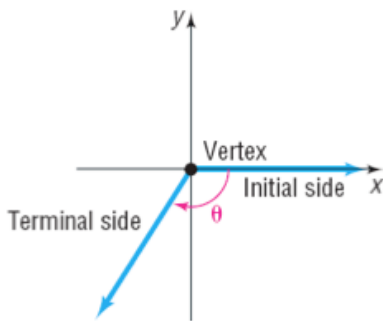
6.1 Angles and Their Measures



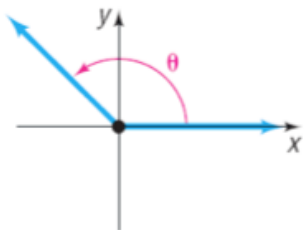
Lowercase Greek letters are used to denote angles.



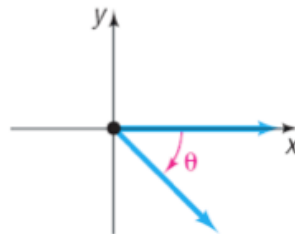
(a) θ is in standard position;
 θ is positive



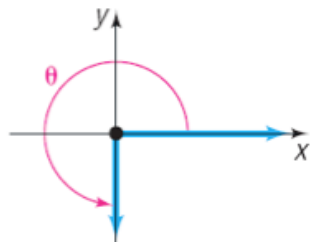
(b) θ is in standard position;
 θ is negative



(a) θ lies in quadrant II



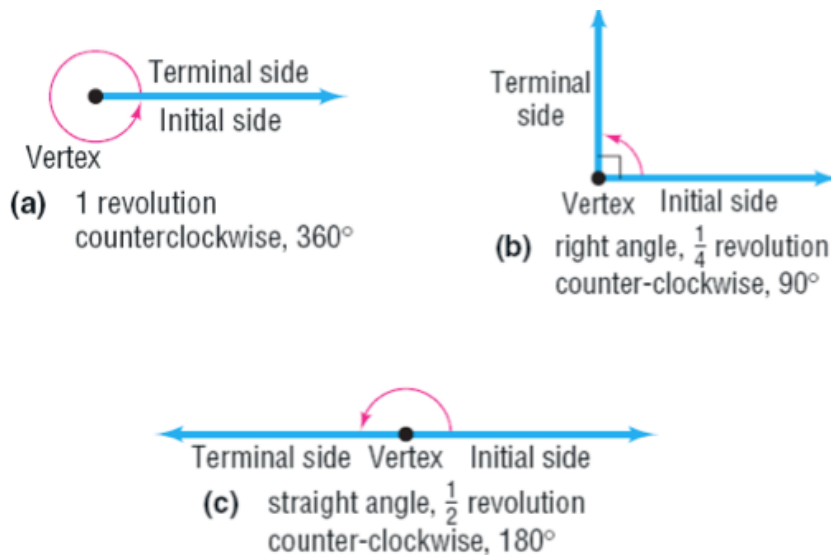
(b) θ lies in quadrant IV



(c) θ is a quadrantal angle

We measure angles by determining the amount of rotation needed for the initial side to become coincident with the terminal side.

The two commonly used measures for angles are degrees and radians. (We will be working with degrees first.)



EXAMPLE Drawing an Angle

Draw each angle.

(a) 45°

(b) -90°

(c) 225°

(d) 405°

1 Convert between Decimals and Degrees, Minutes, Seconds Measures for Angles

$$\begin{aligned} 1 \text{ counterclockwise revolution} &= 360^\circ \\ 1^\circ &= 60' \quad 1' = 60'' \end{aligned}$$

EXAMPLE**Converting between Degrees, Minutes, Seconds, and Decimal Forms**

- (a) Convert $40^\circ 12' 5''$ to a decimal in degrees. Round the answer to four decimal places.
- (b) Convert 78.562° to the $D^\circ M' S''$ form. Round the answer to the nearest second.